

THE TYPE-SPECIES OF BONELLI'S GENERA OF CARABIDAE (COLEOPTERA)

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Quaestiones Entomologicae
11: 579-586 1975

The type-species of the 36 genera of Carabidae described by F.-A. Bonelli in his work Observations Entomologiques (1810 and 1813) are given. The type-species of Laemostenus is designated here.

Nous donnons l'espèce-type de 36 genres de Carabidae décrits par F.-A. Bonelli dans son travail Observations Entomologiques. De plus nous désignons l'espèce-type de Laemostenus.

The early Italian entomologist F.-A. Bonelli described 36 new genera of Carabidae in his two-part publication *Observations Entomologiques* (1810 and 1813). Although Andrewes (1919) did not regard all of these genera as being validly published, this view is no longer held (see Gaskin and Lewis, 1956). Recently, Basilewsky (1969) enumerated the type-species of Bonelli's genera. Type selection in these genera, however, is complicated by the fact that Bonelli did not associate any species with 28 of them, and the types of these must, therefore, be chosen from those species first subsequently included (Article 69 (a) (ii) of the International Code of Zoological Nomenclature, 1964). Basilewsky used Samouelle (1819) as his chief source of these first subsequently included species. Unfortunately, he overlooked most of the Bonelli genera cited with species in Panzer (1813), Latreille (1816), and Germar (1817). The purpose of this paper is to re-examine the type-species of Bonelli's genera in the light of these and other early works.

In the following list I have cited Bonelli's genera in alphabetical order. Under each name are listed all the "originally included species" with their source when this is not Bonelli. These species are numbered in their original order. Any junior synonyms that were cited (and thus available for designation as type-species) are here numbered as subgroups of the senior names to avoid changing the original numbering. The type-species, its designator, and any comments follow. All species are cited in their original combinations.

Abax Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:68): 1) *Carabus striolatus* Fabricius, 1801.
2) *Carabus striola* Fabricius, 1792.

Type-species: *Carabus striola* Fabricius, 1792 (= *Carabus parallelepipedus* Piller and Mitterpacher, 1783), designated by Westwood (1838:4). The designation of *Carabus ovalis* Duftschmid, 1812, by Chaudoir (1838:12) is not valid.

Agonum Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813: 52): 1) *Carabus marginatus* Linnaeus, 1758.
2) *Carabus austriacus* Fabricius, 1801. 3) *Carabus sexpunctatus* Linnaeus, 1758. 4) *Carabus viduus* Panzer, 1796. 5) *Carabus picipes* Fabricius, 1787. 5a) *Carabus lutescens* Panzer, 1796.
6) *Carabus rotundatus* Paykull, 1790. 7) *Carabus vivalis* Illiger, 1798. 7a) *Carabus impiger* Panzer, 1809. 8) *Carabus flavipes* Panzer, 1809. 9) *Carabus impressus* Panzer, 1796. 10) *Carabus fuliginosus* Panzer, 1809. 11) *Carabus albipes* Fabricius, 1796. 11a) *Carabus pavidus* Panzer,

1800. 11b) *Carabus pallipes* Fabricius, 1801. 12) *Carabus ericeti* Panzer, 1809.

Type-species: *Carabus marginatus* Linnaeus, 1758, designated by Curtis (1827, No. 183).

Alpaeus Bonelli 1810:48 and Tabula Synoptica

Originally included species: 1) *Carabus hellwigii* Panzer, 1804. 2) *Alpaeus tibialis* Bonelli, 1810. 3) *Alpaeus gagates* Bonelli, 1810. 4) *Alpaeus castaneus* Bonelli, 1810. 5) *Alpaeus ferrugineus* Bonelli, 1810. 6) *Alpaeus angusticollis* Bonelli, 1810.

Type-species: *Carabus hellwigii* Panzer, 1804, by original designation (p. 53).

Amara Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:57): 1) *Carabus apricarius* Paykull, 1790. 2) *Carabus ferrugineus* Linnaeus *sensu* Degeer, 1774. 3) *Carabus fulvus* Müller, 1776. 4) *Carabus alpinus* Paykull, 1790. 4a) *Carabus torridus* Panzer, 1796. 5) *Carabus aulicus* Panzer, 1796. 6) *Carabus eurynotus* Panzer, 1796. 6a) *Carabus acuminatus* Paykull, 1798. 7) *Carabus vulgaris* Linnaeus *sensu* Panzer, 1797. 8) *Carabus communis* Panzer, 1797.

Type-species: *Carabus vulgaris* Linnaeus *sensu* Panzer, 1797 (= *Amara lunicollis* Schiødtte, 1837), designated by Westwood (1838:4). For a discussion on the identity of *Carabus vulgaris* Linnaeus see Lindroth (1957:335).

Anchomenus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:54): 1) *Carabus scrobiculatus* Fabricius, 1801. 2) *Carabus angusticollis* Fabricius, 1801. 2a) *Carabus assimilis* Paykull, 1790. 3) *Carabus prasinus* Thunberg, 1784.

Type-species: *Carabus prasinus* Thunberg, 1784 (= *Carabus dorsalis* Pontoppidan, 1763), designated by Westwood (1838:3). Westwood erroneously attributed *C. prasinus* to Fabricius.

Aptinus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:71): 1) *Brachinus mutilatus* Fabricius, 1801.

Type-species: *Brachinus mutilatus* Fabricius, 1801 (= *Carabus bombardarda* Illiger, 1800), by subsequent monotypy.

Blethisa Bonelli: Tabula Synoptica and p. 48

Originally included species: 1) *Carabus borealis* Paykull, 1790. 2) *Carabus multipunctatus* Linnaeus, 1758. 3) *Carabus parumpunctatus* Fabricius, 1792.

Type-species: *Carabus multipunctatus* Linnaeus, 1758, designated by Dejean (1826:266).

Calathus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:60): 1) *Carabus melanocephalus* Linnaeus, 1758. 2) *Carabus cisteloides* Panzer, 1793.

Type-species: *Carabus cisteloides* Panzer, 1793 (= *Carabus fuscipes* Goeze, 1777), designated by Curtis (1827, No. 184). Curtis erroneously attributed *C. cisteloides* to Illiger.

Callistus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:52): 1) *Carabus lunatus* Fabricius, 1775.

Type-species: *Carabus lunatus* Fabricius, 1775, by subsequent monotypy.

Carenum Bonelli 1813:47

Originally included species: 1) *Scarites cyaneus* Fabricius *sensu* Bonelli, 1813.

Type-species: *Scarites cyaneus* Fabricius *sensu* Bonelli, 1813 (= *Carenum bonellii* Brullé, 1835), by original designation (p. 47) and monotypy.

Cephalotes Bonelli 1810: Tabula Synoptica

Originally included species (from those included under the replacement name *Brosicus* Panzer 1813:62): 1) *Carabus cephalotes* Linnaeus, 1758.

Type-species: *Carabus cephalotes* Linnaeus, 1758, by subsequent monotypy.

Chlaenius Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:55): 1) *Carabus festivus* Panzer, 1796. 2) *Carabus spoliatus* Rossi, 1792. 3) *Carabus zonatus* Panzer, 1796. 4) *Carabus vestitus* Paykull, 1790. 5) *Carabus holosericeus* Fabricius, 1787.

Hope (1838:75) designated *Carabus spoliatus* Rossi, 1792, as type of *Chlaenius*. Because acceptance of Hope's designation would upset current nomenclature in this important genus, I propose to ask the International Commission on Zoological Nomenclature to use their plenary powers to set aside this designation and select *Carabus festivus* Panzer, 1796, as type-species. This would ensure that the concept of *Chlaenius* stayed the same as that proposed by Basilewsky and Grundmann (1954).

The designations of *Carabus nigricornis* Fabricius, 1787, by Curtis (1825, No. 83) and *Carabus marginatus* Linnaeus, *sensu* 1767, not 1758 by Westwood (1838:5) are not valid.

Demetrius Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:73): 1) *Carabus atricapillus* Linnaeus, 1758. 2) *Carabus quadrimaculatus* Linnaeus, 1758. 3) *Carabus agilis* Fabricius, 1787.

Type-species: *Carabus atricapillus* Linnaeus, 1758, designated by Latreille (1817:246).

Dicaelus Bonelli 1813:14

Originally included species: 1) *Dicaelus purpuratus* Bonelli, 1813. 2) *Dicaelus violaceus* Bonelli, 1813. 3) *Dicaelus elongatus* Bonelli, 1813. 4) *Dicaelus teter* Bonelli, 1813.

Type-species: *Dicaelus violaceus* Bonelli, 1813 (= *Dicaelus purpuratus* Bonelli, 1813), designated by Hope (1838:82).

Dinodes Bonelli 1810: Tabula Synoptica

Originally included species (from Dejean 1821:9): 1) *Dinodes rufipes* Bonelli (*nomen nudum*). 1a) *Carabus azureus* Duftschmid, 1812. 2) *Dinodes rotundicollis* Dejean (*nomen nudum* in 1821).

Type-species: *Carabus azureus* Duftschmid, 1812 (= *Harpalus decipiens* Dufour, 1820), by subsequent monotypy.

Ditomus Bonelli 1810: Tabula Synoptica

Originally included species (from those included under the replacement name *Aristus* Latreille 1816:190): 1) *Carabus interruptus* Fabricius, 1775. 2) *Scarites bucephalus* Olivier, 1795. 3) *Carabus buprestoides* ? Linnaeus, 1767. 4) *Scarites sphaerocephalus* Olivier, 1795. 5) *Scarites calydonius* Rossi, 1790. 6) *Scarites dama* Rossi, 1792. 7) *Carabus longicornis* ? Fabricius, 1792.

Type-species: *Scarites calydonius* Rossi, 1790, designated by Hope (1838: 81). Prior to Hope, Brullé (1835:76) had clearly indicated, but not actually stated, that *Scarites bucephalus* Olivier was the type of *Ditomus*. However, as Brullé did not even place this species in his nominate division of the genus, his designation is ambiguous and thus contrary to Article 67 (c) of the Code. Dejean (1825:437) had acted similarly when he stated that Bonelli had founded *Ditomus* on *Scaurus sulcatus* Fabricius but then placed this species in the second section of the genus.

Acceptance of Hope's type designation as being valid means that the concept of *Ditomus* reverts to that held prior to Bedel (1879:62). Consequently, the name *Ditomus* must replace *Sabienus* Des Gozis, 1882, and another name must be found for the *Ditomus* of authors, not Bonelli. This will probably be *Dixus* Billberg, 1820. As there are relatively few species involved there does not seem to be any great need to preserve *Ditomus* in its current meaning. Family group names based on *Ditomus* will not be affected.

Dolichus Bonelli 1810: Tabula Synoptica

Originally included species (from Latreille 1816:194): 1) *Carabus flavicornis* Fabricius, 1787. 2) *Carabus angusticollis* Fabricius, 1801.

Type-species: *Carabus flavicornis* Fabricius, 1787 (= *Carabus halensis* Schaller, 1783), designated by Latreille (1817:532).

Dromius Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:73): 1) *Carabus truncatellus* Linnaeus, 1761.

Acceptance of *Carabus truncatellus* Linnaeus as type, by subsequent monotypy, would mean that the name *Dromius* would replace *Metabletus* Schmidt-Goebel, 1846, and some other name would be needed for *Dromius* as it is currently understood. *Dromius* and *Metabletus* are large genera, and changes in their generic nomenclature would be undesirable. Therefore, I propose to ask the International Commission on Zoological Nomenclature to use their plenary powers to set aside Panzer's type selection and to designate *Carabus quadrimaculatus* Linnaeus, 1758, as type-species. This is the species accepted as type by Andrewes (1939) and Basilewsky (1969), who both believed that it was designated, by subsequent monotypy, in Samouelle (1819).

Prior to Bonelli the name *Dromius* had been used by Borkhausen (1797:27) for a genus of birds. Andrewes (1939:188) believed that this was a *nomen nudum*, but under the present Code *Dromius* Borkhausen is an available name. Since it is a junior synonym of *Cursorius* Latham, 1790, and has apparently never been used in the birds, I propose to ask the Commission to suppress it in favour of *Dromius* Bonelli.

Dyschirius Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:67): 1) *Scarites thoracicus* Rossi, 1790. 2) *Scarites gibbus* Fabricius, 1792.

Type-species: *Scarites thoracicus* Rossi, 1790, designated by Curtis (1831, No. 354). Curtis erroneously attributed *S. thoracicus* to Panzer.

Enceladus Bonelli 1813:28

Originally included species: 1) *Enceladus gygas* Bonelli, 1813.

Type-species: *Enceladus gygas* Bonelli, 1813, by monotypy.

Epomis Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:56): 1) *Carabus cinctus* Fabricius *sensu* Rossi, 1790. 1a) *Carabus croesus* Fabricius, 1801.

Type-species: *Carabus cinctus* Fabricius *sensu* Rossi, 1790 (= *Carabus circumscriptus* Duftschmid, 1812), designated by Guérin (1824:234).

Helluo Bonelli 1813:21

Originally included species: 1) *Helluo costatus* Bonelli, 1813.

Type-species: *Helluo costatus* Bonelli, 1813, by monotypy.

Laemostenus Bonelli 1810: Tabula Synoptica

Originally included species (from Billberg 1820:28): 1) *Carabus terricola* Herbst, 1784. 2) *Carabus subcyaneus* Illiger, 1801. 3) *Carabus janthinus* Duftschmid, 1812. 4) *Carabus fasciato-punctatus* Creutzer, 1799. 5) *Laemostenus cornutus*, *nomen nudum*.

Type-species: *Carabus janthinus* Duftschmid, 1812, here designated. *Carabus terricola* Herbst has not been selected as it is already the type of *Pristonychus* Dejean, 1828 (designated by Westwood, 1838:2), and it does not seem advisable to make *Laemostenus* and *Pristonychus* objective synonyms. The designation of *Pristonychus complanatus* Dejean, 1828, by Jeannel (1914:236) is not valid; nor is that of *Sphodrus venustus* Clairville, *nomen nudum* (= *Pristonychus venustus* Dejean, 1828) by Jeannel (1937:84).

Lamprias Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:71): 1) *Carabus cyanocephalus* Linnaeus, 1758.

Type-species: *Carabus cyanocephalus* Linnaeus, 1758, by subsequent monotypy.

Melanius Bonelli 1810: Tabula Synoptica

Originally included species (from Latreille 1816:194): 1) *Carabus aterrimus* Herbst, 1784.

Type-species: *Carabus aterrimus* Herbst, 1784, by subsequent monotypy. Acceptance of this designation means that *Melanius* is a senior objective synonym of *Omasseus* Dejean, 1821 (type-species designated by Curtis 1824, No. 15). *Pseudomasseus* Chaudoir, 1838, (type-species: *Carabus nigrita* Fabricius, 1792, by original designation) must replace *Melanius* of authors,

not Bonelli.

Molops Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:69): 1) *Carabus elatus* Fabricius, 1801. 1a) *Scarites gagates* Panzer, 1793. 2) *Carabus terricola* Herbst *sensu* Fabricius, 1792. 2a) *Scarites piceus* Panzer, 1793. 3) *Carabus illigeri* Panzer, 1804.

Type-species: *Carabus terricola* Herbst *sensu* Fabricius, 1792 (= *Scarites piceus* Panzer, 1793), designated by Hope (1838:71). The designation of *Feronia robusta* Dejean, 1828, by Chaudoir (1838:12) is not valid.

Oodes Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:51): 1) *Carabus helopioides* Fabricius, 1792.

Type-species: *Carabus helopioides* Fabricius, 1792, by subsequent monotypy.

Pasimachus Bonelli 1813:44

Originally included species: 1) *Scarites depressus* Fabricius, 1787. 2) *Scarites marginatus* Fabricius, 1787.

Type-species: *Scarites depressus* Fabricius, 1787, designated by Hope (1838:94).

Pelor Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:69): 1) *Blaps spinipes* Fabricius, 1798.

Type-species: *Blaps spinipes* Fabricius, 1798, by subsequent monotypy.

Percus Bonelli 1810: Tabula Synoptica

Originally included species (from Latreille 1816:193): 1) *Carabus paykullii* Rossi, 1792. 2) *Carabus laevigatus* Fabricius, 1781.

Type-species: *Carabus paykullii* Rossi, 1792, designated by Jeannel (1942:769). The designation of *Feronia lacertosa* Dejean, 1828, by Chaudoir (1838:11) is not valid; nor are the designations of *Feronia navarica* Dejean, 1828, by Hope (1838:71) and *Harpalus corsicus* Serville, 1821, by Duponchel (1845:605).

Platynus Bonelli 1810: Tabula Synoptica

Originally included species (from Germar 1817: 303): 1) *Carabus angusticollis* Fabricius, 1801.

Type-species: *Carabus angusticollis* Fabricius, 1801 (= *Carabus assimilis* Paykull, 1790), by subsequent monotypy.

Platysma Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:55): 1) *Carabus nigrita* Fabricius, 1792. 1a) *Carabus aterrimus* Herbst, 1784. 1b) *Carabus confluens* Panzer, 1796. 2) *Carabus niger* Schaller, 1783. 2a) *Carabus leucophthalmus* Linnaeus, 1758.

Type-species: *Carabus niger* Schaller, 1783, designated by Westwood (1838:4). Westwood

erroneously attributed *C. niger* to Fabricius.

Poecilus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:60): 1) *Carabus dimidiatus* Olivier, 1795. 1a) *Carabus kugelanni* Panzer, 1797. 2) *Carabus cupreus* Linnaeus, 1758. 3) *Carabus oblongo-punctatus* Fabricius, 1787. 4) *Carabus panzeri* Panzer, 1804. 5) *Carabus anthracinus* Illiger, 1798. 5a) *Carabus nigrita* Paykull, 1790. 6) *Carabus vernalis* Panzer, 1796.

Type-species: *Carabus cupreus* Linnaeus, 1758, designated by Curits (1827, No. 187).

Polistichus Bonelli 1810: Tabula Synoptica

Originally included species (from Latreille 1816:184): 1) *Carabus fasciolatus* Rossi *sensu* Fabricius, 1801.

Type-species: *Carabus fasciolatus* Rossi *sensu* Fabricius, 1801 (= *Buprestis connexus* Fourcroy, 1785), by subsequent monotypy.

Procrustes Bonelli 1810:19 and Tabula Synoptica

Originally included species: 1) *Carabus coriaceus* Linnaeus, 1758.

Type-species: *Carabus coriaceus* Linnaeus, 1758, by monotypy.

Pterostichus Bonelli 1810: Tabula Synoptica

Originally included species (from Panzer 1813:70): 1) *Carabus fasciatopunctatus* Creutzer, 1799. 2) *Carabus metallicus* Fabricius, 1792. 3) *Carabus jurine* Panzer, 1804. 4) *Carabus aethiops* Panzer, 1796.

Type-species: *Carabus fasciatopunctatus* Creutzer, 1799, designated by Curtis (1828, No. 196). Curtis erroneously attributed *C. fasciatopunctatus* to Fabricius.

ACKNOWLEDGEMENTS

I thank G. E. Ball and J. Belicek of the Department of Entomology, University of Alberta, Canada, and C. H. Lindroth of the Zoological Institute, Sweden, for their helpful comments on the manuscript. Page charges were met by Grant A-1399, National Research Council of Canada, held by G. E. Ball.

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